

PRENTICE COMPUTER CENTRE

UNIVERSITY OF QUEENSLAND, ST. LUCIA, QUEENSLAND, AUSTRALIA. 4067.



NEWSLETTER

N-277

1-November-82

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1.0 NEW FEATURES OF MIC AND COJOBS

MIC is a system which allows you to execute a file of commonly used commands by giving a single command. This is particularly useful if you are a regular user of the system and find you are often using the same sequence of commands. A file containing these commands could be created using CREATE TEST.MIC, for example, then performed by typing DO TEST.

A fuller introduction to MIC is contained in the file, DOC:MICUG.MEM, which you may print or type if you are interested. DOC:MICREF.MEM is the much larger reference manual which includes the new features described in this article. The new version of MIC is 11B(31177).

MIC INPUT Command (MIC reference manual section 7.7)

This command is used to accept the input of a parameter value from the user's terminal from within the processing of a MIC command file.

The format of the command is:-

.MIC INPUT p

or

.MIC INPUT p,"(prompt-message)"

where

p is the parameter, normally A to Z, for which the value is to be supplied. However parameter values may also be input to parameters in outer nested processes by specifying A1, G3, etc. - (see section 6.1 Parameters in Outer Processes) and

(prompt-message) is the message output to the user to invite him to type in the line of input. If the prompt-message is omitted then the input will be prompted for the display of "Enter parameter p". The prompt message may be either a string variable or a string constant and may include carriage returns and linefeeds.

System parameters (MIC reference manual section 9.1)

Parameter Substitution -

A construction of the form '(system parameter name) allows access to various system parameters.

e.g. '(DAY) may be replaced by "Friday".

The new system parameters are:-

LOGFILE The name of the Cojob's LOG file "DEV:FILE.EXT
[PATH]".

ERRCHR Returns the current error character.

OPRCHR Returns the current operator character.

DAY The current day of the week as a text string.

Miscellaneous Special Parameters (MIC reference manual section 9.3)

This is a group of parameters for specialised use.

'(PSHIFT)

The PSHIFT or parameter shift command causes all parameters to be shifted by one, that is

```

        discard the contents of parameter A,
then
    A:=B, B:=C, C:=D ... X:=Y, Y:=Z
and
    Z:=null

```

This command may be used in a loop for processing a string of identical parameters.

'(PROTATE)

Like PSHIFT the PROTATE or parameter rotate command causes all parameters to be shifted by one. The difference is that PROTATE sets Z equal to A instead of discarding A. For example:

```

        save the contents of parameter A,
then
    A:=B, C:=D, ... X:=Y, Y:=Z
and
    Z:= the saved contents of A

```

String Constants

Several commonly used strings of constants are now available as MIC parameters.

ALPHABET

The \$ALPHABET or '(ALPHABET) parameter returns a string of the characters A through Z.

NUMERIC

The \$NUMERIC or '(NUMERIC) parameter returns a string of "1234567890".

ASCII

The \$ASCII or '(ASCII) returns the characters with values 1 through 127 in ASCII character set.

Note:

```
LET A=$ASCII.[90]
```

returns the character whose ASCII value is 90, i.e. "Z".

CR

The \$CR or '(CR) returns a single carriage return character.

CRLF

The \$CRLF or '(CRLF) returns a string of the two characters (carriage-return) and (line-feed).

Substitution of Parameters in Outer Processes (MIC reference manual section 9.4)

It is often required to substitute the contents of a parameter in an outer nested process in a similar way to the "'parameter-name" used for parameters at the current level. As the syntax "'A1" cannot be used due to possible confusion, the syntax is '(Parameter-name Level).

e.g. to substitute parameter Q in the third outer process we use

```
'(Q3)
```

MIC SET Command (MIC reference manual section 12.0)

This family of commands is used to change the action "MIC" performs upon certain conditions.

The format of the command is:-

```
.MIC SET (NO) (ACTION)
```

TRACE (MIC reference manual section 12.8)

This is a feature which a user may use when debugging a completed MIC macro. If the command

.MIC SET TRACE

is executed, then MIC displays all labels that are processed during search commands (GOTO/BACKTO or implied GOTOs due to errors).

The first six characters of every label are displayed in square brackets, and a carriage return is not displayed until the last label is processed. Also MIC will display [TRUE] or [FALSE] on the execution of every "IF" conditional command.

SILENCE (MIC reference manual section 12.9)

This is another feature which is useful in debugging MIC macros. If the command

.MIC SET NO SILENCE

is executed, then MIC will ignore all attempts to silence the current, and any nested, MIC macros. The default is:-

.MIC SET SILENCE

The following documents may be consulted for further reference.

HLP:MIC.HLP - for HELP MIC

DOC:MICUG.MEM - MIC users guide, a 13 page introductory document

DOC:MICREF.MEM - MIC reference manual, 50 pages

DOC:COJOB.DOC - A short description of the Concurrent job facility

Ian Burgess
extension 2959

2.0 COMPARING FILES - A NEW VERSION OF FILCOM

When changes have been made to a source program, it is often desirable to discover just what the changes were. If the original file is still available, the system program, FILCOM, may be used to show the differences.

FILCOM is useful for binary files as well as program source files and other text (ASCII) files. Type HELP FILCOM for a very brief description and list of the options (switches) available. For instance, /U is useful for manuals, to list the new manual with a bar against the new and changed sections.

The new version of FILCOM, available by RUN NEW:FILCOM, now recognises various types of program sources by the extension or either file and makes it a little easier to locate changed lines by adding a reference to the nearest label, statement label or procedure name. Most languages, including MIC and batch control files are recognised, unknown types being treated as text with no labels.

Ian Burgess
extension 2959

3.0 PSST! WANNA BUY SOME DIRTY PLOTS?

or,
How I learned SPSS without ever wanting to.

Yes, friends, here is the long-awaited description of SPSS Graphics as customized (for your added convenience) to our system. Now, with a minimum of fuss, you can specify the output plotter, and which pen colours you want.

I wont bore you with the details of the SPSS commands used. These can be found in the SPSS Update 7-9 manual - excellent material for curing insomnia. This stuff relates to the Graphics Postprocessor (the exciting bit!)

When SPSSGP runs, it looks on the user's area for a file called SPSSGP.DAT . If it can't find the file, default values are used. If SPSSGP can find the file, here is what is taken from the file.

```

line 1, cols. 1-4 - Plotter name, e.g. PLT1
           cols. 6-10 - name to associate with plot

line 2, cols. 1-5 - Colour of Pen 1, e.g. Blue
           cols. 6-10 - Type of pen 1, e.g. Biro
           cols. 11-15 - size of pen 1, e.g. 0.5mm

```

line 3, columns as above, for pen 2

line 4, columns as above, for pen 3

line 5, columns as above, for pen 4

You may leave spaces for any field, and defaults will be used.

By this time you are probably wondering what the defaults are.

```
Plotter - PLT1 (CALCOMP 936)
Name - SPSS
Pen 1   - BLUE, BIRO, NORMAL size
Pen 2   - RED,  BIRO, NORMAL size
Pen 3   - GREEN, BIRO, NORMAL size
PEN 4   - BLACK, BIRO, NORMAL size
```

I might just mention that PLT0 has one pen, invariably filled with black ink, PLT1 has three pens, and PLT2 (at Griffith University) has four pens.

A description of running SPSSGP appeared in Newsletter N-274, June 1982. Don't forget that SPSSGP also runs TEKTRONIX and HP graphics terminals. We can also make it run other devices.

Mark Williams
extension 2835

4.0 YES, VIRGINIA, TCS WILL RUN ON THE VAX!

The infamous TEKTRONIX plot subroutine library is now alive and well on the VAX. You can now draw on your TEKTRONIX terminal or plotter with programs running on the VAX.

To use the subroutines with a program having the highly original name of FRED, the steps would be -

- (1) Compile your program FRED normally
- (2) Link FRED with the TCS library, using the command line

```
$LINK FRED,[SYSLIB]TCS/L
```

- (3) Type the command "\$SET TERM /FORMFEED/NOWRAP"
- (4) Run FRED

Line (3) ensures that graphics commands function correctly. It need only be typed once per login.

A couple of cautions. You may receive a message "Module 'FINITT' has compilation warnings". Ignore this message - the machine is just being too fussy. The other problem is with the BAKSP subroutine. Frankly, it doesn't work. This only affects you if the alpha cursor is to be moved backwards. Call me if this is a problem.

Your programs using TCS should behave the same on the PDP-10's, PDP-11's, and the VAX. Please let me know (using the MAIL facility; send to GRAPHICS) if you have troubles.

Mark Williams
extension 2835

5.0 HARD COPY FOR THE TEKTRONIX 4014

A hard copy unit (model 4611) is now connected to the TEKTRONIX 4014 Graphics Terminal, located in the Graphics Room. This means that you can draw a plot on the screen, and produce a hard copy within seconds.

It's extremely simple to use. Turn the power on, wait a couple of minutes for the unit to warm up, then whenever you push the COPY button on either the 4611 or the 4014, it's Hey! Presto! the screen contents are copied.

Alas, the unit uses special paper and toner, which costs money. So we need to charge for using the machines, at \$3 an hour. You can book use of the TEKTRONIXs (should the plural be Tektronii?) at the operators window in the Client's Room or by phoning 3024.

Mark Williams
extension 2835

6.0 NEW SOFTWARE FOR THE TEKTRONIX

Yet another preview program! But this one has a few different flavoured icings on it.

The new program, TEKPLO, will preview plots produced for the CALCOMP plotters. So what's new? This one draws on a TEKTRONIX 4662 plotter, or leaves a "clean" screen for making use of the 4611 Hardcopy unit.

A typical use, to display the file FRED.PLT, would be -

```
.TT FORM NO CRLF
.R PLO:TEKPLO
File ? FRED.PLT
Factor ? 1
Produce TEKTRONIX 4662 output ? NO
```

. . . (draws plot) . . .

Now for the "nitty gritty" bits.

- (1) When the machine asks for 'File ? ', you can type a full PDP-10 file specification, e.g. DSKG:FRED.PLT[10,556], or as little as 'FRED', in which case it looks for FRED.DAT on your area.
- (2) The FACTOR prompt allows you to set a scaling factor. A value of 1 gives a plot on your 4662 plotter that is the same size as you would get from the CALCOMP plotter. Merely hitting "return" forces a factor of 1.
- (3) Answering "YES" to "Produce TEKTRONIX 4662 output ? " will draw the plot on the plotter hooked to your terminal. The plotter switches should be set at "1 1 6 3", for switches A to D. (This assumes the plotter is to be run at 1200 baud.) The terminal should be placed in the communications line BETWEEN the computer and the terminal.
- (4) Answering "NO" or "return" to that question draws the plot on the screen. It does NOT draw one of those horrible boxes over the top of your plot. It does NOT write "End of plot. More?" on the screen. It DOES "bleep" when the plot is complete, allowing you to press "COPY" to get a clean hard copy to take away. Pressing "return" will exit from the program.

As generated, the program is designed for terminals running at speeds of 1200 baud or lower. At higher speeds you may find the first parts of the drawing are missing. This can be altered, if necessary, by the Centre.

Thanks must go to those imaginative souls at the Botany Department whose inspiration and money allowed this program to be produced.

Mark Williams
extension 2835

7.0 NETWORK SOFTWARE - A REMINDER

The Centre has developed several programs to make life easier for users of PDP-11s to communicate to the PDP-10. This is a quick look at what is available.

- (1) Virtual Terminals from PDP-11 to the PDP-10. A user of an RSX-11 or RT-11 system can run a program which makes him appear as a normal PDP-10 terminal user.
- (2) File transfers between PDP-11 and PDP-10. Users on the PDP-10 can send files to, or request files from, an RSX-11 or RT-11 or VMS system. These can occur concurrently with Virtual Terminal activities.
- (3) Print files from PDP-10 to a PDP-11 printer. A PDP-10 user can give a PRINT command which causes his file to be printed on an RSX-11 system's printer.

You can find out more about virtual terminals by typing "HELP VTY" and file transfers from "HELP ACCESS" (on the PDP-10). Please contact the Computer Centre if you would like to use these facilities and are currently unable to.

We've a few other "goodies" in the pipeline. Soon you will be able to use "SET HOST UQVAX" commands from the ANF-10 network. Files will be printable from the VAX onto PDP-10 printers. And file transfers between PDP-10, VAX, or PDP-11's running RSX-11 will be able to be initiated from any of those machines. We'll announce these facilities in the newsletter as they become available.

Mark Williams
extension 2835

8.0 LIBRARY NEWS - NAG (KL)

The NAG library is a collection of algorithms to solve numerical problems. Version 9 of the NAG library has been installed on STA: on the KL which brings the KL version up to date with NAG on the VAX. Users should be aware that NAG on the KL is a single precision implementation whereas NAG on the VAX is double precision. The new and obsolete routines were described in Section 6.2 of newsletter N-275. Manuals are available for reference from the Batch Station or the Program Librarian.

Leonie Roberts
extension 3943

9.0 CHANGES TO TYPESETTING SYSTEM

Recently there have been several changes made in the fonts (character styles) available within the ITPS typesetting system on the APS-5 phototypesetter at Queensland Newspapers. These changes have been brought about by several upgrades and revisions made to the APS system by Queensland Newspapers. Four new fonts have been added, several point-size availabilities have been adjusted, and one font has been deleted from the system. The following pages of this newsletter show a complete up-to-date example of all the fonts which are currently available. Copies of this list may be obtained from the batch stations where manuals are sold so that those users who have purchased a copy of MNT-7 (Introduction to Computer Typesetting) can update Appendix E.

The new fonts are as follows:

250	Souvenir Light
252	Souvenir Bold
260	Century Schoolbook Light
262	Century Schoolbook Bold
270	English Script
750	Special Logos

Fonts 700, 710, 712 and 720 are now only available in sizes of up to 48 point, and fonts 780 and 782 (the Techno Book fonts) are no longer available.

If you have any queries regarding these changes or experience problems using any of the new fonts feel free to contact me.

Andrew Broughton
extension 2837

The type styles available on the APS-5 phototypesetter from September, 1982 are as specified in the following list. Some previous fonts (namely 780 and 782) have been removed, some size availabilities have been updated (fonts 700, 710, 712, and 720), and several new fonts have been added (250, 252, 260, 262, and 270).

Font 230 Times New Roman in 10 point, available in 6-96 point
ANDERSON'S LAW. I have yet to see any problem, however complicated, which, when you looked at it in the right way, did not become still more complicated.

Font 231 Times New Roman Italics in 10 point, available in 6-48 point
AGNES ALLEN'S LAW. *Almost anything is easier to get into than out of.*

Font 232 Times New Roman Bold in 10 point, available in 6-96 point
BOK'S LAW. If you think education is expensive, try ignorance.

Font 620 Times Roman Bold Italics in 10 point, available in 6-48 point
COMPUTER MAXIM. *To err is human but to really foul things up requires a computer.*

Font 240 Bodoni Bold in 10 point, available in 6-96 point
BOMBECK'S RULE OF MEDICINE. Never go to a doctor whose surgery plants have died.

Font 241 Bodoni Bold Italics in 10 point, available in 6-96 point
CLOPTON'S LAW. *For every credibility gap there is a gullibility fill.*

Font 250 Souvenir Light in 10 point, available in 6-96 point
KRISTOL'S LAW. Being frustrated is disagreeable, but the real disasters in life begin when you get what you want.

Font 252 Souvenir Bold in 10 point, available in 6-96 point
Understanding the laws of nature does not mean we are free from breaking them.

Font 260 Century Schoolbook in 10 point, available in 6-96 point
Half of being smart is knowing what you're dumb at.

Font 262 Century Schoolbook Bold in 10 point, available in 6-96 point
ORBEN'S PACKAGING DISCOVERY. To-day, one bag of groceries produces two bags of garbage.

Font 270 English Script in 15 point, available in 6-15 point

There is no such thing as free love.

Font 630 Newton Light in 10 point, available in 6-48 point
BEIFELD'S PRINCIPLE. The probability of a young man meeting a desirable and receptive young female increases by a pyramidal progression when he is already in the company of 1. a date, 2. his wife, 3. a better looking and richer male friend.

Font 640 Newton Medium in 10 point, available in 6-96 point
WING-WALKING, FIRST LAW OF. Never leave hold of what you've got until you've got hold of something else.

Font 641 Newton Medium Italics in 10 point, available in 6-48 point
CORCORAN'S LAW. *All papers that you save will never be needed until such time as they are disposed of, when they will become essential.*

Font 642 Newton Bold in 10 point, available in 6-96 point
GARDENING, LAW OF. You get the most of what you need the least.

Font 650 Newton Medium Condensed in 10 point, available in 6-96 point
IRON LAW OF DISTRIBUTION. Them that has—gets.

Font 660 Newton Bold Italics in 10 point, available in 6-48 point
HARRIS'S LAW. *Any philosophy that can be put "in a nutshell" belongs there.*

Font 670 Techno Extra Bold in 10 point, available in 6-96 point
DARWIN'S OBSERVATION. Nature will tell you a direct lie if she can.

Font 680 Techno Extra Bold Condensed in 10 point, available in 6-96 point
EVE'S DISCOVERY. At a sale, the only dress that you like and that fits is not the one on sale.

Font 700 Univers Light in 10 point, available in 6-48 point
ETTORRE'S OBSERVATION. The other queue moves faster. This applies to all queues—bank, supermarket, customs. If you change queues, then the other queue—the one you were in originally—will move faster.

Font 710 Univers Medium in 10 point, available in 6-48 point
FIEDLER'S FORECASTING RULES. 1. It is very difficult to forecast, especially about the future. 2. He who lives by the crystal ball soon learns to eat ground glass. 3. The moment you forecast, you know you're going to be wrong—you just don't know in which direction. 4. If you are ever right, never let them forget it.

Font 712 Univers Bold in 10 point, available in 6-48 point
FALKLAND'S RULE. When it is not necessary to make a decision, it is necessary not to make a decision.

Font 720 Univers Extra Bold in 10 point, available in 6-48 point
GOLDEN PRINCIPLE. Nothing will be attempted if all possible objections must first be overcome.

Font 730 Bell Gothic Light in 10 point, available in 6-48 point
PARKINSON'S LAW. 1. Work expands so as to fill the time available for it's completion. 2. Expenditure rises to meet income.

Font 732 Bell Gothic Bold in 10 point, available in 6-48 point
OSBORN'S LAW. Variables won't, constants aren't.

Font 690 News Gothic Bold Condensed in 10 point, available in 6-96 point
LUCE'S LAW. No good deed goes unpunished.

Font 800 News Gothic Bold in 10 point, available in 6-96 point
RUNYON'S LAW. The race is not always to the swift, nor the battle to the strong. But that's the way to bet.

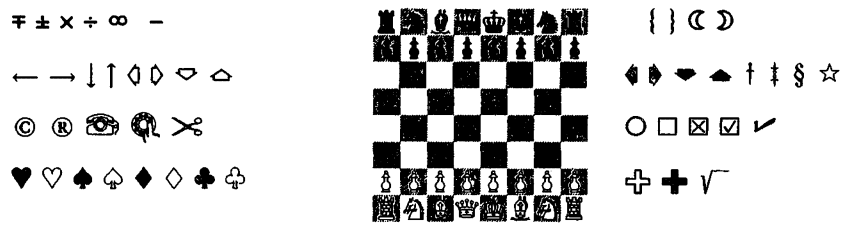
Font 810 Gothic Extra Condensed in 10 point, available in 6-96 point
SEGAL'S LAW. A man with one watch knows what time it is; a man with two watches is never sure.

Font 820 Gothic No. 13 in 10 point, available in 6-96 point
THURBER'S CONCLUSION. There is no safety in numbers, or in anything else.

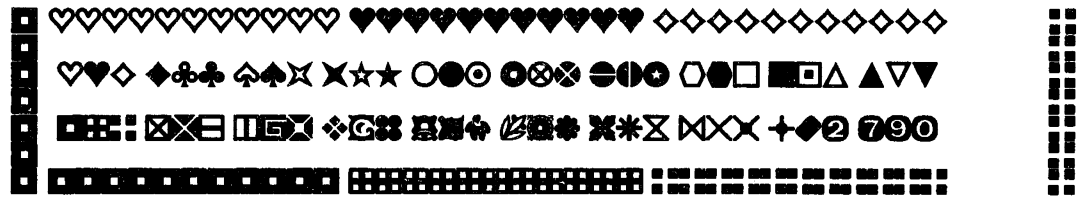
Font 840 Reiter Reverse in 10 point, available in 6-96 point

UNNAMED LAW. If it happens, it must be possible.

Font 740 Pi in 10 point, available in 6-96 point (chess to 28 point only)



Font 850 Border Rules in 10 point, available in 6-15 point



Font 600 Logos in 56, 60 and 64 point, available in 56-96 point



Font 750 Special logos (including Christmas decs), available in 56-96 point



10.0 INFORMATION CONCERNING COURSES

Below is listed the proposed schedule of courses for the remainder of 1982:

November

Introduction to PDP-10	: November 8-9 2 full days 9-12am + 1-4pm each day
VAX Conversion Course	: November 10 1 full day 9-12am + 1-4pm
Introduction to PDP-10	: November 11-12 2 full days 9-12am + 1-4pm each day
RUNOFF	: November 15-19 5 half days 9am-12.30pm each day
1022	: November 15-19 5 half days 1-4pm each day
SPSS	: November 22-26 5 half days 9am-12.30pm each day
VG	: November 22-26 5 half days 1-4pm each day
Elementary FORTRAN Programming	: November 29 - December 3 5 full days 9-12am + 1-4pm each day

December

Introduction to PDP-10	: December 6-7 2 full days 9-12am + 1-4pm each day
Elementary BASIC Programming	: December 8-10 3 full days 9-12am + 1-4pm each day.

The following programme of courses has been tentatively set for the pre-Semester I period of 1983. Enrolments will be accepted for all the advertised courses and those enrolled will be advised if subsequent changes have to be made to the dates of courses. It is also possible that some additional courses may be added to this provisional schedule.

January 1983

Introduction to PDP-10	: January 10-11 2 full days 9-12am + 1-4pm each day
------------------------	--

VAX Conversion Course : January 12
1 full day 9-12am + 1-4pm each day

Introduction to PDP-10 : January 13-14
(GU) 2 full days 9-12am + 1-4pm each day

RUNOFF : January 17-21
5 half days 9-12am each day

SPSS : January 17-21
5 half days 1-4.30pm each day

1022 : January 24-28
5 half days 9-12am each day

SPSS (GU) : January 24-28
5 half days 1.30-5pm each day

February

VG : February 7-11
5 half days 9-12am each day

Elementary BASIC : February 7-11
Programming 5 half days 1-4.30pm each day

Statpack : February 14
1 full day 10-12am + 1-3pm

General Notes

1. The course "Introduction to PDP-10" is intended for new users and those with no previous experience with the DEC-10 system. Users without this experience must attend this course before enrolling in any other course.
2. All courses are free of charge to staff and post-graduate students of both University of Queensland and Griffith University. All other users must pay the appropriate fee, viz:

VAX Conversion Course	: \$20.00
Plotting/Graphics	: \$30.00
Introduction to PDP-10	: \$40.00
1022, VG	: \$50.00
RUNOFF, BASIC, SPSS	: \$60.00
FORTAN	: \$100.00

3. Courses designated (GU) will be held in the AES Terminal Laboratory at Griffith University. All other courses will be conducted in the Hawken Building, St Lucia.

4. To ensure sufficient practical experience is obtained, enrolments at all courses are limited. If enrolled for a course, which you are unable to attend, please advise us as soon as possible so that your place may be taken by someone on a waiting list. When insufficient enrolments are received for any course, that course may be cancelled by the Centre.
5. Enrolments for all courses may be made by phoning extension 3018.

Barry Maher
extension 3021

ADDITIONAL COURSES FOR 1983?

Course schedules for 1983 are presently being constructed. While there will certainly be some additions to the list of "old favourites", there are other areas in which it is suspected there would be sufficient interest to warrant the offering of courses.

In an attempt to gauge likely response, the following short questionnaire has been prepared, which you are asked to complete and return if some or all of the topics listed could form the basis of a course which you would be likely to attend.

1983 Courses Questionnaire

Name:

Department:

I would be interested in a short course/seminar/demonstration being arranged in the following area(s):

[Please indicate interest by marking appropriate box(es)]

- ☐ Simple use of TECO Editor (KA, KL, VAX and other PDP-11's)
- ☐ Use and management of PDP-11's
- ☐ Advanced Fortran
- ☐ Introduction to micro-computer and CPM
- ☐ Other (please specify):

Please return to Barry Maher, Prentice Computer Centre.

